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ABSTRACT

This paper reviews analyses undertaken by four separate persons to examine the problems and goals of education and to suggest program priorities for the initial years of the National Institute of Education. The document describes the consensus concerning goals and the manner in which the different analyses move from goals to a list of programs. The author then integrates suggestions from the separate papers to present a single list of program areas. The final section describes the need for more exploration in each area before programs are actually designated and lists criteria for final program selection. (Author/DN)

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PROGRAM PLANNING FOR THE NATIONAL INSTITUTE OF EDUCATION

A SUMMARY OF FOUR R&D ANALYSES

National Institute of Education
Planning Unit

May 30, 1972

EA 005 784

TABLE OF CONTENTS

		Page
I	Introduction ----------	1
II	Identification of Goals ----------	2
III	Identification of Programs ----------	4
IV	Agreement Among Program Suggestions ----------	6
V	Criteria for Program Selection ----------	23

Attachments:

I Individual Document Summaries

II Participants in NIE Planning

Program Planning for the National Institute of Education

A Summary of Four R&D Analyses

I. Introduction

The National Institute of Education has been established to help the country carry out its commitment to provide quality education for its citizens at a reasonable cost. Its purpose is to develop a more adequate knowledge base in education and to apply that knowledge in solving educational problems and improving practice in the field. In order to begin such a task, the Institute must first try to determine what the most important problems are--today's and those that are likely to emerge over the next five to ten years--and devise promising strategies for addressing them.

A Planning Unit was established early in 1971 to design the Institute structure, examine problems and goals of education, and suggest program priorities for the initial years. During the spring of 1972, the NIE Planning Unit asked four separate groups of people to undertake ~~this~~ the goal and problem analysis, with their products to be a rationale for the Institute's 1973 R&D agenda. Two of the analysis groups were led by Senta Raizen and Beverly Kooi, both members of the Planning Unit. The other reports submitted were by O. W. Markley of Stanford Research Institute and Amitai Etzioni of the Center for Policy Research. A separate summary of each of the four planning reports is included in Attachment 1, and Attachment II lists people involved in the various planning activities sponsored by the Planning Unit over the last year.

This paper reviews the four R&D analyses. The next section describes the consensus concerning goals and section III follows with a brief description of how the different analyses move from goals to a list of programs. Section IV integrates suggestions from the separate papers to present a single list of program areas. Finally, the need for more exploration of each area before programs are actually designated and criteria for final program selection, ~~are listed in section V~~.

II. Identification of Goals

Each of the four analysis teams had access to all of the earlier NIE planning documents, and consulted with many people concerning education and NIE's role in improving it. They built on this information to select goals that were broad and met the criterion of being universal to education in most societies. One team did a particularly thorough examination of the domain of education as a basis of its selection, and all teams selected goals which, if fulfilled, would also solve the major problems of American education.

All four of the analyses agreed very closely on the central goals of education. For example, Amitai Etzioni's paper had one category of goals called Output Goals which included:

- Increasing the child's capacity to find, evaluate, digest and utilize information, in contrast to memorizing
- Preparing the child for a wide range of careers and life styles
- Developing the child's capacity to lead a full and just life--open to new ideas, aesthetic considerations, to others and to themselves

The two Planning Unit teams also had similar sets of goals. In one analyses the central goals were called Learner Goals and divided into areas of social-emotional development, cognitive development, and physical development. In another, they were "End" goals and included academic skills, social skills, career skills, personal development, and attitudinal skills. Also mentioned as part of End goals were the parents' goal of custodial care, the educators' need for a rewarding profession, and society's need for such functions as training of a work force, selection of people for jobs, etc.

~~In addition to End goals,~~ The teams all listed the means of attaining their Output or Learner or End goals as another category of goals. In the Kooi paper, means goals included increasing productivity of education, providing access to educational services, and promoting citizen participation. Etzioni included improving the quality of education, equality of opportunity, economy in providing services, and legitimizing the system through participation. In the Raizen paper, means goals were equality and access, responsiveness of the system, increasing productivity, and coordination with other societal institutions.

One document had a third set of goals not treated directly by the other reports. These were called enabling goals, and included activities needed to support the R&D system, in contrast to the educational system. The main activities within these goals are training R&D personnel, dissemination of R&D efforts, and selection and training of personnel needed to implement new R&D programs.

The SRI team (Markley) approached educational goals in a different manner, although many of the specific goals they articulated were identical with those identified by the other three teams. They found it useful to classify the problems of education as being of a chronic, acute, or adaptive nature; and identified educational goals related to problems of each type. Chronic problems are those that have existed in the past, and are expected to exist in the future. Acute problems are those which appear to be of critical immediate importance. Adaptive problems stem from stresses and dislocations induced by the high rate of change in the various sectors of society which impact on education. Although chronic problems need continuing attention and acute problems seem most demanding of attention, the importance of anticipatory R&D in preventing adaptive problems from becoming acute was especially stressed.

Finally, Senta Raizen's team had an interesting discussion of the contraditions among goals. They explained that the need for individuality conflicts with the need for a common cultural core; the need for plurality places constraints upon entry into the mainstream of society; there are contradictions inherent in promoting both quality and egalitarianism; it is difficult to simultaneously get advantages of both centralization and decentralization. This team also mentioned the ever rising expectations and standards that cause goals to shift.

III. Identification of Programs

Each of the teams identified programs that should be included in the 1973 R&D agenda for NIE. Senta Raizen's group classified programs by

priority areas derived from its goal analysis: (1) improving the quality of education, (2) education of the poor, and (3) use of resources in education. Suggestions from this group are especially strong in their call for initial planning by conferences of experts in relevant fields and participants in the educational enterprise. They stress use of unsolicited proposals in basic research areas but focused on priority concerns. They emphasize identifying outstanding educational practice and taking advantage of natural experiments. Most program initiatives would require a continuation of research and experimentation carried on simultaneously and feeding into each other for achieving educational improvement.

Beverly Kooi's team classified programs by their specificity to goals. Some programs, especially basic research, seem to relate to one goal or another. Others involved either the Learner ("End") goals or the System ("Means") goals, but not both; these were called specialty area programs. Other programs involved all goals, and were called comprehensive programs. Comprehensive programs are primarily concerned with action, or actual experimental intervention in educational systems and can include basic research as well as development. This team not only listed new programs, but integrated into its agenda the approximately $100,000 in programs that will continue from USOE.

After listing many societal trends and resulting educational goals, the SRI team chose to concentrate its planning suggestions in areas not being covered by other analyses: research relating the societal context

of education to the setting of educational R&D policy, decentralized methods to increase the effectiveness of the educational R&D system, and research on multi-organizational coordination.

The programs suggested by Amitai Etzioni's team seemed heavily influenced by his assumptions that the current school system is not likely to be replaced and that the humanizing goals have been neglected in favor of more cognitive goals. Thus, of his seven programs, one is designed to review R&D on the current system and provide guide books to improve the achievement of its goals, a second is to develop economies--especially through technology--so the system can survive, and a third is to build a communication link between NIE and the agencies of the current system.* The other four Etzioni programs, directed at the need to humanize education, include development of tests and social indicators, providing reality-oriented experiences for students, building new ways for citizens to participate and run their community's education, and restructuring authority patterns in education.

IV. Agreement Among Program Suggestions

There were many program suggestions in the four documents--several times over what the NIE budget could possibly accommodate. Most of the ideas were repeated in several papers, perhaps in different form, or combined with other ideas to make a comprehensive program. For example, the following suggestions for development programs appeared in three different documents:

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* These programs are respectively Operation Codify--Blueprint, Technological Shortcuts to Economize, and Operation Dialogue.

1. Opportunities for Idealism, Reality Testing, and Integration: Providing student opportunities for community service, teaching others, working as volunteers, writing a town history, etc.; cross-class, cross-race, and cross-ethnic integration for such learning experiences.
2. Multidisciplinary Problem-Oriented Courses for Adolescents: Providing accurate factual information about society and its institutions so that the idealism of youths can be harnessed to sound perceptions; building substantive encounters with the community and life into the curriculum.
3. Career Education: Experiments in providing a variety of non-school experiences in the community and on jobs, in exposing students to adults who fill many different roles in society, in providing accurate information on careers as life styles, and in promoting recurrent cycles of education and employment throughout life.

Clearly, each of these major programmatic suggestions is concerned with using real life experience to decrease the separation of students from society, but the last combines this with a career emphasis. The document that contained the second suggestion also had another idea that would fit closely with career education. It called for an "early exit experiment" in which compulsory education would end at fourteen years of age, but the student would receive an entitlement for a specified number of years of schooling at any time.

For the most part, program ideas were only very generally developed in the documents. Sometimes the authors had changes to single courses in mind; sometimes they were interested in planning complete schools around the themes they described, and sometimes they meant to establish alternatives that were not a part of current schools at all. Nowhere was the design and feasibility work for any suggestion complete enough to actually begin a program. Often, even the review of research related to a program or general area was very incomplete. For this reason, the classification of programs for this summary had to be somewhat arbitrary and was done in terms of broad general areas that planners suggested for NIE consideration rather than in terms of programs the Institute should immediately begin.

Even with such generality in the documents, their program suggestions seemed to fall into three main categories: (1) Activities that produced or collected information and disseminated results of the analysis, (2) Activities designed largely to improve practices in the current educational system; and (3) Programs addressing major problems that would result in new forms of education that do not necessarily depend upon the current system to operate. Under these categories, specific areas could be identified as follows:

A. Analysis and Basic Research

1. Needs Assessment
2. Evaluation and Information Programs
3. Basic Research
4. Analytic Studies

B. Programs for Current Educational Systems

1. Instructional Development
2. New Measures for Education
3. Promoting Student Self-Direction
4. School Alternatives
5. Increasing Productivity
6. Planning, Management, and Organization
7. Personnel Selection and Training
8. Researcher Training

C. New Forms of Education

1. Home-Based Models
2. Employer-Based Models
3. Community Participation Programs
4. Post-Secondary Alternatives

Each of these areas is described below, with a few sentences on the rationale that papers developed in making their suggestions.

A. Analysis and Basic Research

Analysis and Basic Research expand our useable knowledge about education and synthesizes it for efficient presentation to decision-makers. There are four program suggestions within this category. The first program, Needs Assessment, gives NIE information about public desires and reactions to educational improvement. The second program, Evaluation and Information Programs, provides empirical data on what is going on in education and what works well. The third program, Basic Research, investigates why things work well or are accepted. It also provides support to attract promising researchers from other disciplines to education. Finally, to synthesize all of this information and help decision-makers identify gaps that need to be filled or problems that need to be solved, a fourth program, Analytic Studies, is proposed.

1. Needs Assessment

NIE leaders will be making funding decisions and giving advice on educational action to government leaders. These functions require up-to-date information on the state of education and public opinion about education. Such information should include:

- Continuous monitoring of demographic trends and societal events and values that might help predict and prevent future problems.

- A continuous survey of public attitudes, to find out what each of the large constituencies of education believe is important, and what kinds of programs they prefer.

- A systematic collection of data on educational performance in broad problem areas such as central-city schools, handicapped and disadvantaged students, use of resources, and levels of citizen participation in education.

At the broad problem level, these data will provide a picture of emerging and receding problem areas, and information on whether NIE programs are responsive to the concerns of students, parents, educators, employers, taxpayers, politicians, and representatives of government and science.

Extensive data collection efforts already exist through NCES, Bureau of the Census, Labor Department, and private educational polls or organizations like Lou Harris Associates, Gallup, Phi Delta Kappa, etc. Therefore, this program will first assess present efforts, and then design and initiate whatever supplementary data collection activities are needed. Because the purpose of this program area is to fill internal NIE needs, it might initially be handled as an intramural activity.

2. Evaluation and Information Programs

Teachers often engage in creative and intuitive practices that result in successful learning for their students. They find activities that motivate because the content is interesting or the presentation makes it fun. They learn how to help students help each other, or where to find new instructional resources in the community. Frequently, though, only the teacher's immediate friends learn about the new idea that works so well, because there is no systematic way to evaluate and provide information about it to other people. An even more

critical deficit in educational communication is that we often do not evaluate and disseminate information about the large scale improvements that are developed under government funding.

The purpose of this activity is to identify successful practices and provide information about them to policy-makers, educators, students, parents, and the general public. Several steps would be required:

- Establishing a simple mechanism for two-way communication between NIE and the country's educational agencies.
- Establishing criteria for success.
- Identifying examples that meet these criteria.
- Closely monitoring the selected practices to answer the question: How does this work?
- Whenever possible, articulating the theory behind the practice or answering the question: Why does this work?
- Determining the information necessary for successful replication of the practice, and the most effective way to communicate that information.
- Providing information to interested audiences.

3. Basic Research

The purpose of basic research in education is to describe the characteristics of individual students and educational systems and to determine what variables in home, school, and community affect learning. Such basic research can be internally conducted or directed, or it can be part of an external unsolicited program. Directed research usually responds to a specific gap in knowledge that must be closed before a development program proceeds vary far. For example, as a part of a career education program, we might study the variables in a child's background that lead to flexibility in adult decision making.

Unsolicited basic research is usually conducted to add to a base of knowledge not necessarily related to any immediate development effort. These studies can be large or small. Examples of large studies are longitudinal studies (beginning in early childhood) of

characteristics of successful and unsuccessful learners, comparisons of the influence of school and non-school factors on learning, and identification of social and economic indicators of the value of education. On a smaller scale, studies often are requested by researchers who have a hunch about some relationship, perhaps arising as a by-product of some larger study, and need just a small sum for a pilot study to explore the idea.

Each of the analyses suggested both of these categories of directed and unsolicited research. Also, in order to draw upon a wide range of talent and educational studies, basic research should call on talent from many disciplines. Finally, grants of various sizes should be provided to accomodate both small scale and larger programmatic studies.

4. Analytic Studies

The purpose of this program is to analyze and synthesize all of the information about education that is collected in other places, and present it in usable form for the decision-makers of NIE and education generally. The program was suggested as a continuing effort, principally intramural, and based on an analytic framework that is similar to the one being followed by the current NIE Planning Unit in specifying programs:

- Analysis of Educational Goals

  Development of a goals structure

  Identification of target groups affected by the achievement of these goals

- Description of State of the Art

  Review of on-going educational practices and R&D activities relevant to goals defined above

  Identification of significant variables within these practices and activities

  Delineation of gaps in our knowledge and practice

- Specification of Program Alternatives and Recommendations

  Formulation of new program initiatives responding to analysis above

  Evaluation and integration of existing R&D activities

- Strategies for Recommending Programs

  - Development of criteria based on pay-off and feasibility of suggestions

  - Providing information in usable form for decision makers.

Some specific content was recommended by the planning documents for initial analytic studies. Examples are:

- A review of knowledge on failure of education for the poor
- A survey of the literature on the relationships of nutrition and physical development to learning
- Studies of incentives, mechanisms and obstacles to organizational change
- Policy oriented research on alternative strategies for school finance

B. Programs for Current Educational Systems

The legislation for NIE states that one of the Institute's purposes is to improve educational practice in our current system. This can be done by identifying successful techniques and adapting or replicating them in new places, by developing new content to meet changes in society, by performing educational functions more efficiently, etc. Not only is most of our current USOE sponsored R&D designed to improve practice, but many of the new program suggestions are also within this area. They are classified, for discussion, into eight categories. Three of these categories represent almost entirely new thrusts: developing new measures for education, promoting student self-direction, and increasing productivity in education. Three of the areas relate to many programs that will be continued from earlier years in USOE, but also have several new suggestions: instructional development, school alternatives, and personnel selection and training.

Finally, in two areas a great number of ongoing programs were suggested for completion with their activities thereafter to be integrated within other major research programs: researcher training and R&D on planning, management, and organization. Each of the eight categories is described below:

B.1 Instructional Development

Instructional development involves making the methodology and content of instruction more responsive to student needs. Though this continues over the years as the "classic" area of educational R&D, trends in content do change. Two decades ago, for example, developers met public concern about U.S. competition in science by building sophisticated new physics and math courses. Following that, wide-scale testing programs showed an almost shocking lack of achievement in basic skills. This led to the new R&D Centers and Regional Laboratories development of programs to teach reading and math. Several of these programs are now becoming available to practitioners. Finally, many of our current curriculum development efforts reflect the recent humanistic emphasis in education. Examples might be programs for esthetic education or humanizing learning.

The greatest present challenge to R&D in this area is building curricula for people who face a life of rapid social change. Such curricula must both impart complex social skills and avoid alienating the student in the process. Irrelevant content and passive learning experiences are frequently cited causes of such alienation. NIE's planning documents suggested a number of programs to meet this new challenge:

- Multidisciplinary Problem-Oriented Courses for Adolescents: Providing accurate factual information about society and its institutions so that the idealism of youths can be harnessed to sound perceptions; building substantive encounters with the community and life into the curriculum.

- Developing Complex Skills: Examination and development of new learning approaches (e.g., experiences that require logical problem solving based on information processing and evaluation of options), and the installation of successful approaches in a variety of settings.

B.2 New Measures for Education

Writers of the NIE planning documents agreed that new measurement procedures could be the basis for changes in the present structure of education and allocation of resources within it, or measures could provide new bases for credentialing so that current educational requirements could become more flexible. However, a program of exploration and development would be needed to realize this potential. Though there are some widely used tests that might adequately assess proficiency in reading, mathematics, and the sciences, there are virtually no generally acceptable instruments for assessing complex problem solving skills and social-emotional behavior. For NIE to sponsor development of even rough milestone measures of learning in these domains would represent a vital and useful first step. The purpose of this NIE initiative is to take that first step of examination of educational measurement needs and design a program to fill gaps in the area. During the coming year, the Institute should explore new techniques such as criterion-referenced (or domain-referenced) tests which directly sample behaviors and skills in specific areas and do not attempt to compare the student with others nor to predict his future ability. Another promising direction--both for individual measures and for developing social indicators for learning situations--lies in the expansion of direct observational methods.

Before new techniques are expanded, however, the availability and sufficiency of measurements must be determined. Information is needed on what behavior should be tested, what tests are available, and how will current measurements work. When promising measures are identified, but validity, reliability, or standardization data are missing for them, this data should be collected. Such study will identify gaps in traditional and new measurement so that a rational NIE program can be designed.

B.3 Promoting Student Self-Direction

People have different patterns of learning and preferences for content, and learn best when instruction is sensitive to these differences. As each person matures, he becomes expert in his own patterns and preferences, but classrooms and schools are not usually structured to use this expertise; instead, the teacher directs groups of students in standardized content rather than students directing themselves. In fact, the Commission on Instructional Technology (1970) estimates that no more than five percent of school time involves media other than the teacher, the book, the blackboard, and pictures, charts and maps hung on the wall. As a result, when most students leave school they don't know how to adopt the basic academic and problem solving skills they

have learned to fit their own interests. They cannot easily direct and continue their own education; but must return for yet another teacher-led class if they want to learn more. The purpose of this program is to examine current techniques to make students more independent in learning and to combine and adapt those techniques into an integrated over-all program of instruction.

There have been some scattered efforts to provide more choices for individual students in what they learn as well as when and how quickly they learn it. These efforts, which might relate to self-directed instruction, include models for computer assisted or computer managed instruction. They also include open classroom programs and curricula structured to provide alternate media, content, and sequence in learning in order to meet needs of different students. However, the features of these activities that promote independence in learning are not clearly identified; nor have they ever been put into a single program and described well enough to be reproduced with reliable results.

A review of current innovations to find outstanding examples of things that appear to work in building self-directed students should be undertaken. Those open schools, for example, might be carefully studied to determine whether there are real empirical results, and if so, whether certain technology or procedures can be identified to which such results can be attributed. These features would then become the basis for systematically developed instructional models with clear objectives and a variety of learning experiences and presentation media.

B.4 School Alternatives

A major problem with piecemeal attempts at educational reform, such as altering a segment of the curriculum, is that the effects are often washed out by the new activity's lack of congruence with other unchanged activities in a school. One answer to this problem is the development of comprehensive alternative school models, which include a large set of mutually enhancing and reinforcing changes in educational practice--that is, changes not only in school staffing patterns, but also in financial support patterns, staff training patterns, school organizational patterns, community participation patterns, etc.

Two major ongoing examples of the school alternatives are the Free School Movement and the U. S. Office of Education's Experimental Schools Program. The Free School Movement is an attempt by parents and teachers to develop alternatives outside the public school system. The Experimental Schools Program is an attempt by the Government to help local school districts plan, develop and implement alternatives within the public school district. Several experimental schools have been implemented and generally attempt to combine promising practices derived from research and demonstration into comprehensive programs.

Planners suggested that NIE activity in the area of school alternatives include continued support for the Experimental Schools Program. For new activities, the planners suggested that NIE explore the possibility of involving a wide range of disciplinary specialists in joint planning of a comprehensive educational alternative. Such interdisciplinary participation might be especially useful to neighborhoods with diverse ethnic or social groups, e.g., districts for whom the present standardized school program works least well. Finally, suggestions were made for NIE to explore the possibility of supporting those alternative school movements currently receiving widespread grassroots support (e.g., the Free School Movement) for purposes of documenting how such programs work, what effects they have, and how they can be replicated.

B.5 Increasing Productivity

In recent years educational revenues have not been adequate to satisfy needs. Even though our birth rate is declining and our population is growing older, the demand for more years of education and the rising cost of providing it are likely to continue for some time. We are not only demanding more years of instruction, but also asking that instruction be more effective, more individualized, more relevant to the world outside of the school, and more accessible to all individuals. While increased expenditures will probably be necessary, it is at least equally important to provide education at efficient cost levels. The purpose of this program is to develop ways to fill this need for providing efficient cost levels in education.

Research on productivity in education has begun to develop a theoretical base describing the benefits of schooling. However, studies of how educational inputs relate to outcomes for individuals and society have up to now been hampered by insufficient breadth in selection of variables. That is, economists have too frequently tried to find relationships between easily measured things like number of years in school and later income, or educational level of teachers to achievement of students. Even when such relationships are positive, the variables are too gross to indicate action that should be taken.

In addition to economists, a community of very active school finance experts have been studying the fiscal properties of our educational system. Notable efforts have been the work of the National Educational Finance Project and the President's Commission on School Finance. Both of these projects, which were funded through the U. S. Office of Education, have contributed to the base of information on educational costs according to regions of the country, kinds of programs and characteristic groups of students. These large projects have resulted in recommendations for further study and for action to bring efficient cost levels in education.

A final emphasis in the recent concern about productivity in education has been in the area of use of technology. As long as education, like other service sectors of the economy, remains labor intensive, cost reductions will be difficult to achieve. Yet, most recent use of technology in education has been treated as a supplement to the existing program and this added cost rather than reducing it. Current technology development is promising but must receive more intensive attention if it is to contribute to productivity.

In the area of productivity we need to design a research effort to remedy our lack of knowledge about how well various educational features and practices work. The proposal will include developing information that helps us make decisions about the best use of student time, the effectiveness of various educational experiences, the qualification and allocation of teachers, etc. In developing this information, NIE must consider how student characteristics such as sex, age, ethnic and peer group, etc., interact with educational experience to affect success.

A second major topic for NIE to consider in relation to productivity is the non-progressive use of technology in our system. As a first step, it seems imperative for NIE to review the field, considering educational technology in its broadest sense; e.g., aspects of learning such as motivation and incentives, alternative learning systems, and management and organizational systems. Such broad consideration will help identify ways to build a technology-based educational program that may help reduce costs of education in the long run, rather than our current technology-supplemented programs that tend to increase costs.

B.6 Planning, Management and Organization

Planning involves selection, analysis, and presentation of data needed for educational decisions and action; organization is directed toward the ultimate design of new organizational structures and processes, and management involves the selection of goals and programs, the implementation of programs, and the revision of programs as necessary to meet goals.

There is a significant amount of R&D designed to improve these functions in education currently underway at Regional Laboratories and R&D Centers. The purpose of most of these current programs is to develop tools and procedures that have general utility. As these efforts are completed, planners felt that funds should be used for R&D in the same areas of planning, management, and ~~evaluation~~ ORGANIZATION, but geared to to specific needs of comprehensive programs and related to the major effort on increasing productivity. By that time, the comprehensive programs will be ready for this level of R&D effort, and in many cases the same agencies could be the performers. Budgeting

and management, however, would then be accomplished through a directed program task force.

B.7 Personnel Selection and Training

The present decline in teacher shortages suggests the timeliness of developing recruitment, training, certification, and selection policies that will insure outstanding educational personnel. One problem with present educational training and certification procedures is that they are not performance-based. While they include a supervised practice teaching experience, the degree and certification are awarded on the basis of credit hours of course work, rather than on the basis of the teacher's having demonstrated an ability to successfully provide learning experiences for students. A second problem with present educational personnel training programs is that they prepare the teacher and/or administrator to fit into the conventional school--a school in which each teacher is the sole purveyor of instruction for a group of about thirty students.

Ongoing Office of Education R&D activities related to educational personnel selection and training include programs to individualize teacher education, to build competence in teaching bilingual students and low income students, and to develop differentiated staffing patterns.

Additional programs suggested for NIE in this area are exploration of:

- Alternatives to group-oriented and teacher-presented instruction, such as use of multilayered staffs and technological devices.

- Attempts to train educational personnel in the skills that will enable them to be competent agents of change in their institutions.

B.8 Researcher Training

This is a current program which has some fund commitments for the coming year and generates a great deal of support from constituents in the field. Its primary purpose is to encourage quality training of educational researchers and research related personnel. The program was originated to meet a need generated by the approximately 30-fold increase in Cooperative Research funds over the past decade and the dramatic shift in emphasis from conventional research studies to large scale development, diffusion, and evaluation efforts.

Most of NIE planners have recommended completion of the current Researcher Training commitments, then redirected training activities so that they are associated with large ongoing programs, perhaps including apprenticeships on R&D problem solving efforts.

Specific objectives within the current Researcher Training Program include identifying the types of training most critically needed by educational R&D personnel, developing and testing materials to train them, and providing support for such operational training programs. A project to identify R&D personnel needs is being funded by the National Center for Educational Statistics, but directed by USOE's Researcher Training staff. NIE, in assuming leadership, would probably want to continue this cooperative arrangement if possible. The materials development programs are being conducted, for the most part, through consortia efforts that should be evaluated by NIE during the coming fiscal year.

C. New Forms of Education

The final major category of program suggestions is developing new forms of education. This area includes a program to explore the possibility of home-based education, perhaps with development of home learning centers where small groups of children come together to learn at a neighbor's house. Parents might also come to this program to learn how to help their children. A second program called employer-based education is designed to give students a variety of learning experiences at various job and community agency sites. A third program is to investigate and develop new mechanisms for citizen participation in the educational enterprise. Finally since many planners suggested exploring alternatives for post-secondary education, this area is included. Each of these exploratory program possibilities is discussed below.

C.1 Home-Based Models

Recent evidence indicates that developing alternative programs for education in the home might have high R&D pay off. For example, Mostellar and Moynihan (1972) have just published a reanalysis of the Coleman data, confirming the importance of out-of-school influences on learning; success of parent-tutoring programs of several Regional Laboratories, and learning gains made by children who watch Sesame Street show promising directions for home education; finally, studies of early learning suggest that developing ways to help mothers help their own children may be effective in improving education. Even when mothers work, data

reported by the White House Conference on Children show that overwhelmingly their choice for child care is another home. Yet, educational research has thus far focused on ways to improve education in institutions rather than homes. To fill this gap, a program was suggested to explore ways of complementing current education by making use of home learning centers in neighborhoods.

OCD has begun a related program for home-based education that could be supplemented by R&D efforts of NIE. It is proposed that the Institute, during the coming year, explore a wide variety of such joint efforts. Though identification of program components will require further study, there is likely to be a need for developing educational experiences for small groups of children who learn together in homes, for measures of social and physical development of children in such home learning centers, for ways to coordinate home and school learning experiences so they become a total educational program.

C.2 Employer-Based Models

The purposes of the R&D effort in employer-based education are (1) to provide learning experiences for students at employer's sites, (2) to make a variety of adults in different career roles available as models to students, (3) to give students access to accurate career information, and (4) to explore the possibility of a program to facilitate recurrent cycles of education and employment in adult life. The employer-based program grows out of a need to reduce isolation between schools and other community institutions. It is directed toward building the skills and attitudes necessary for successful career decision-making, and for meaningful participation in community and social-action activities. The cornerstone of the 1973 NIE effort will be the employer-based and the residential models for career education that transfer from USOE.

Alternative strategies in career education were identified and parameters for models to be developed were outlined by a USOE Task Force toward the end of FY 1971. Through FY 1972 the models will be in the planning, design and developmental state. Four Regional Laboratories are establishing pilot employer-based programs in as many cities. In each case, the Laboratories are assembling a group of employers who will later form a consortium to be responsible for the model career education activities.

The Residential Model for Career Education has established a rural residential center which provides day care, elementary and secondary education, career and technical education, parent education, family health and welfare services, counseling, and cultural and recreational opportunities. The program is currently in pilot operation and has just developed the hypotheses and strategies that will guide future development.

There will be three primary efforts in Fiscal 1973--continuation of the Employer-based and Residential Models for Career Education, and exploration of the possibilities of an "Early Exit" experiment. The new "Early Exit" activity is a suggestion by NIE planners to explore the possibility of reducing the number of years of compulsory schooling so that students may leave school at the end of the eighth grade and be provided an entitlement to four (or perhaps six) more years of free schooling to be used at any time of life.

C.3 Community Participation Programs

A number of studies have demonstrated that citizen participation increases educational effectiveness and reduces alienation. Cloward and Jones (1963) and Schiff (1963) have shown that parent participation lead to higher parent regard for the value of schooling, greater pupil achievement, better school attendance and study habits, and fewer disciplinary problems. Chilman (1966) and Clark (1964) have documented how children growing up in the inner-city sense their parents' distrust of schools and feelings of powerlessness, and come to assume that they also have little control over their fate. Finally, Seasholes (1965), in an analysis of the political socialization of Blacks, states that when parents exercise control or power in the school and community, they convey this sense of control to their children; and that these children no longer view themselves as powerless and lacking in self-worth.

In spite of the evidence attesting to the significance of lay participation for the school's effectiveness, current mechanisms for citizen involvement are often ineffective. For example, the school board is frequently incapable of adequately informing citizens about educational activities, despite its major responsibility to do so; this often results from political, administrative, and financial constraints. Furthermore, advisory personnel are obligated by tradition to make the whole school look good.

Several unique experiments, like voucher systems and performance contracting, are underway to improve mechanisms for decision-making. NIE should evaluate these, and undertake research to pinpoint new directions for NIE's experimentation in community participation. A specific recommendation of the planners was for a program that explores voluntary sector approaches and new governance mechanisms. For example, intermediate community agencies might be tried, to serve as a neutral ground where parents and members of the local community can jointly work on innovative approaches to education with school personnel. If procedures are effective they are more likely to be adapted by the school.

C.4 Post-Secondary Alternatives

Many recommendations are now being made for alternative structures and forms of post-secondary education. Among the most prominent are those made by the Carnegie Commission and the Newman panel. A number of institutions of higher education are attempting to reduce reliance on traditional models through a variety of programs: the Open University of Great Britain and the University Without Walls sponsored by the Union for Experimenting Colleges and Universities embody the most sweeping of these alterations. Non-residential degree programs are currently under consideration by a number of universities and are now being developed by Rutgers University, Empire State College and the New York Board of Regents.

The belief that education need not be tied to a single time or place led planners to suggest the need for exploration of a wide variety of post-secondary alternatives to test the assumption that their growth will help the educational system better meet the diverse needs of all its clients. Though identifying specific program components requires further study it is possible to indicate the kinds of alternatives that might be appropriate. For those students who are interested in certain portions but not all of a traditional degree program, the Institute might explore "unbundling" higher education into discrete components--provided by both the profit and non-profit sectors. For students who are interested in pursuing a specific career option beyond high school, development of post-secondary career education models might be indicated. For all adults who want to expand their educational experiences, the concept of life-long learning should be evaluated.

V. Criteria for Program Selection

Many of the broad program areas described in section IV have yet to be analyzed and specific activities within them identified before funding priorities can be set. The sixteen suggestions must be examined in relation to what has been done in each area, what needs to be done and what resources are available. With this information, specific program activities can then be designed over the next few months.

In order to set priorities within the group of detailed program selections, the agency will need specific data about what the operational steps to implementation are, how much the program costs, what its potential

benefits are, which target audiences it addresses, what groups might oppose such a program, etc. With this kind of data the Director and his staff can apply judgmental criteria like the following to make decisions about funding and support:

- Appropriateness as an activity for the Federal Government: Are State and local agencies unable to sponsor action? Is the program unattractive to the private sector? Does the program address a national need?

- Appropriateness as an activity for NIE: Is the program an activity that is basic to the research and development mission of NIE? Could it be assumed by another agency? Is inter-agency cooperation desirable?

- Potential significance: To what extent does the program respond to one of the central educational problems? Does it also respond to other problems? Do the probable outcomes of the program promise to make a significant contribution to the reform of the American educational system?

- Feasibility of the program: Can it be expected to achieve its objectives within an appropriate time frame and at a cost commensurate with the results? Are the individuals and resources needed to implement the program readily available? Is it politically feasible?

- Pay-off: What are the anticipated benefits? At what costs are they to be obtained? How does the cost/benefit estimate compare to those of other programs?

- Adoptability: What is the likelihood of continued support of the program after federal funds are withdrawn? What is the likelihood of adoption by secondary targets? How costly will it be for local authorities to implement?

- Potentially undesirable side-effects: Is there a possibility that the program will induce changes or

create conditions in American education that are unintended and undesirable?

- Program balance: Will the implementation of this program, considered in relation to the other programs supported by NIE, contribute to a well-balanced research and development effort that addresses all of the agency objectives?